

REMARKS

Claims 1-7 are of record.

The Office Action is responded to by corresponding sections.

Drawings. Applicant respectfully submits that the requirement for drawing correction is not appropriate and should be withdrawn. The pre-cooling exchanger (4), the first refrigerant compressor (5), the cryogenic heat exchanger (7), the second refrigerant compressor (8) and the piping complex (9) are disclosed in Fig. 2. Therefore, the requirement should be withdrawn.

Claim Rejections - 35 USC §112. Applicant respectfully traverses the rejection that the subject matter of claims 6 and 7 does not comply with the written description requirement. Applicant submits that the subject matter of these claims is described in the Specification and shown in Fig. 2. The Examiner should note that according to the gas liquefaction plant 1 of one embodiment of the present invention, since the pre-cooling exchanger 4, the first refrigerant compressor 5, the cryogenic heat exchanger 7 and the second refrigerant compressor 8 are installed at one side 16 of the piping complex, it is not required to install the refrigerant piping 9, which connects the pre-cooling exchanger 4 and the first refrigerant compressor 5, and the refrigerant piping 9, which connects the cryogenic heat exchanger 7 and the second refrigerant compressor 8 in the pipe rack 11. Thus, it is possible to reduce the height of the pipe rack 11, to solve the issue of the strength of the pipe rack 11, and to shorten the design and construction period of pipe rack 11 so as to reduce the construction cost. In addition, it is possible to reduce high elevation work so that the risk related to the construction is reduced.

In the above description, the pre-cooling exchanger 4, the first refrigerant compressor 5, the cryogenic heat exchanger 7 and the second refrigerant compressor 8 are installed at one side 16 of the piping complex. Further, in Fig. 2, these facilities are put on top of the piping complex.

The piping 9 connects the pre-cooling exchanger 4 and the first refrigerant compressor 5 without passing through the pipe rack 11. Further, another piping 9 connects the cryogenic heat exchanger 7 and the second refrigerant compressor 8 without passing through the pipe rack 11. Thereby, the issue of the strength of the pipe rack 11 can be solved. That is, the pipe rack 11 supports the pre-cooling exchanger 4, the first refrigerant compressor 5, the cryogenic heat exchanger 7 and the second refrigerant compressor 8 excluding the piping 9. Therefore, it is understood that the piping complex is a support member which supports these facilities.

Therefore, it has been shown that the subject matter of claims 6 and 7 is described in the Specification and that the rejection should be withdrawn.

Claim Rejections - 35 USC §103. Claims 1-5 are rejected as being unpatentable over Cole, U.S. 6,016,665. Claims 1-5 are also rejected as being unpatentable over Roberts, U.S. 6,199,479.

Claim 1 has been amended to incorporate the subject matter of claim 2, which has been cancelled. Amended claim 1 sets forth the refrigerant piping which connects the pre-cooling heat exchanger and the first refrigerant compressor, and the refrigerant piping which connects the cryogenic heat exchanger. It also sets forth that the second refrigerant compressor is arranged without being installed in the piping complex.

According to the invention, as set forth in amended claim 1, the refrigerant piping directly connects the pre-cooling heat exchanger and the first refrigerant compressor, and further directly connects the cryogenic heat exchanger and the second refrigerant compressor without passing through the piping complex. That is, it is not required to install the refrigerant piping 9 in the pipe rack 11. This has an advantage in that the height of the pipe rack 11 can be reduced and the issue regarding the strength of the pipe rack 11 is solved.

In the references of Cole and Roberts, the above descriptions are neither disclosed nor suggested.

Accordingly, claim 1 as now amended is clearly patentable and should be allowed.

Claims 3-5 depend from amended claim 1 and set forth further features of the invention that add to its novelty. Therefore, these claims also should be allowed.

Claim 4 has been amended to correct an antecedent basis issue.

Prompt and favorable action is requested.

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Respectfully submitted,

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